

CLAIMS

I Claim:

1. A system for handoff comprising:
 - a. At least one tethered device with power line communication circuitry, and
 - 5 b. A means to perform a handoff, whereby an untethered device is handed off from a first base station to a second base station.
6. The system for handoff in accordance with Claim 1, wherein said first base station or said second base station are connected to a communication network whereby said communication network
10 may be an individual or plurality of other bridge devices, a wireless network, a power line communication network, an ATM network, an Ethernet network, a Gigabit Ethernet network, a PCI-Express network, a fiber optics network, a local area loop, a cellular network, a home power line network, a digital subscriber line network, a cable modem network, a cable television network, a copper line network, a plain old telephone network, a packet based network, an 802.11
15 network, an 802.16 network, an 802.20 network, a Bluetooth network, an ultra wideband network, or other similar network creating a mesh network.
7. The system for handoff in accordance with Claim 1, wherein said means to perform a handoff comprising:
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 - a. determining data with respect to untethered devices,
 - b. evaluating said data in relation to a requirement, and
 - c. handing off said untethered device when said requirement is met, whereby said untethered device is handed off from said first base station to said second base station.
- 25 8. The system in accordance with Claim 1, wherein said tethered device is coupled to a physical interface whereby said physical interface is a photo detector socket, a light bulb socket, an electrical outlet, an enclosure attached inductively around a power transmission line, an enclosure entirely housed in a sunlight photo detector attached to a photo detector socket on a utility pole or street light, a means to interface spliced into a light fixture, a means to interface spliced into a
30 power transformer, or a means to interface spliced into an electric meter.
9. The system for handoff in accordance with Claim 1, wherein said untethered device communicates using either wireless, infrared, ultraviolet, laser, visible light, magnetic, ultrasonic, acoustic, impulse, ultra wideband, electromagnetic energy or a combination of these
35 communication methods, and said tethered device communicates using either power line,

wireless, infrared, ultraviolet, laser, visible light, magnetic, ultrasonic, acoustic, impulse, ultra wideband, electromagnetic energy or a combination of these communication methods, and said means to perform a handoff is according to IEEE 802.16, IEEE 802.20, IEEE 802.15, IEEE 802.11 including IEEE 802.11e, ultra-wideband, GSM, CDMA, EDGE, GPRS, TDMA, WCDMA, CDMA2000, 3G, 4G, OFDM, flash OFDM specification or according to another communication protocol supporting handoff.

10. The system for handoff in accordance with Claim 1, wherein said tethered or said untethered device can also communicate using a method or protocol that does not support handoff.

12. The system for handoff in accordance with Claim 1, wherein said tethered device can repeat data from other tethered devices or other untethered devices associated with the same communication network or a different communication network.

13. The system for handoff in accordance with Claim 1, wherein said tethered device can track and locate untethered devices including mobile phones, monetary instruments, and individuals, and based on this real time positioning securely broadcast multimedia content whereby said untethered device stores the content according to digital rights management.

14. The system for handoff in accordance with Claim 1, wherein said tethered device does not integrate a receiver or does not integrate a transmitter whereby said receiver or said transmitter is located in a different location such that said tethered device uses a co-located receiver or a co-located transmitter over said communication network, or said mesh communication network, or said power line communication network as if said receiver or transmitter was located in said tethered device.

15. A communication switch comprising:

- a. a bridge with power line communication circuitry, and
- b. a means for switching.

16. The communication switch in accordance with Claim 15, wherein said bridge has the ability to communicate over a communication network which comprises an individual or plurality of other bridge devices, a power plane network associated with the power pins of semiconductor chips, a wireless network, a power line communication network, an ATM network, an Ethernet network, a Gigabit Ethernet network, a PCI-Express network, a fiber optics network, a local area loop, a cellular network, a home power line network, a digital subscriber line network, a cable modem

network, a cable television network, a copper line network, a plain old telephone network, a packet based network, an 802.11 network, an 802.16 network, an 802.20 network, a Bluetooth network, a ultra wideband network, or other similar network creating a mesh network.

5 17. The bridge in accordance with Claim 21, wherein said means for switching using said bridge device comprising:

- a. disconnecting said second communication network from said bridge device, and
 - b. connecting at least one third communication network to said bridge such that said bridge joins together said first communication network with said third communication network
- 10 whereby said bridge acts as an integral part of the backbone of the joining of the first and third communication network.

15 21. The communication switch in accordance with Claim 15, wherein said bridge joins together at least one first communication network with at least one second communication network whereby said bridge acts as an integral part of the backbone of the joining of the first and second communication network.

22. The communication switching in accordance with Claim 15, wherein

- a. said bridge acts as an integral part of the backbone of at least one first communication network with at least one associated first cell and at least one second communication network with at least one associated second cell whereby said bridge joins together said first communication network and said second communication network,
 - b. said first communication network and said second communication network may or may not be the identical communication network,
 - c. said first cell may or may not overlap with said second cell,
 - d. at least one untethered device is communicating within said first cell using said first communication network, and
 - e. said means for switching disconnects said untethered device from said first cell and connects said untethered device to said second cell whereby said untethered device is
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- 30 switched from said first communication network to said second communication network.

23. A device for handoff comprising:

- a. a communication circuitry,
 - b. a physical interface, wherein said physical interface is a photo detector socket, and
 - c. a means to perform a handoff using said communication circuitry.
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24. The physical interface in accordance with Claim 23, wherein said photo detector socket may be substituted by a light bulb socket, a means to interface spliced into a light fixture, a means to interface attached around or spliced into a power transmission line, a means to interface spliced into a power transformer, or a means to interface spliced into an electric meter.

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25. The device for handoff in accordance with Claim 24, wherein said means to perform a handoff is communicating through said physical interface by said communication circuitry, and said photo detector socket may be substituted by an electrical outlet.

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26. The device for handoff in accordance with Claim 23, wherein said communication circuitry communicates using either power line, wireless, infrared, ultraviolet, laser, visible light, magnetic, ultrasonic, acoustic, impulse, ultra wideband, electromagnetic energy or a combination of these communication methods, and said means to perform a handoff is according to GSM, CDMA, EDGE, GPRS, TDMA, WCDMA, CDMA2000, OFDM, flash OFDM, 3G, 4G, IEEE 802.16, IEEE 802.20, IEEE 802.15, or IEEE 802.11 specification including IEEE 802.11e or according to another communication protocol supporting handoff.

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27. The system for handoff in accordance with Claim 8, wherein said means to perform a handoff is communicating through said physical interface by said tethered device.

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28. The system for handoff in accordance with Claim 1, wherein said tethered device is said first base station and a different tethered device is said second base station.